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9 **DEBASISH MUKHOPADHYAY**

10 **UNITED STATES DISTRICT COURT**
11 **NORTHERN DISTRICT OF CALIFORNIA**

12 **DEBASISH MUKHOPADHYAY, an**
13 **individual,**

14 **Plaintiff,**

15 **vs.**

16 **LUNDIN MINING CORPORATION, a**
17 **Canadian corporation,**

18 **Defendant.**

19 **Case No.: CV**

20 **COMPLAINT FOR**
21 **PATENT INFRINGEMENT**

22 **JURY TRIAL DEMANDED**

23 Plaintiff Debasish Mukhopadhyay ("Deb") brings this action against Defendant Lundin
24 Mining Corporation (hereinafter "Defendant Lundin") for infringement of Plaintiff's U.S. Patent
25 Nos. 8,617,398 B2 ("the '398 patent") and 8,641,905 B2 ("the '905 patent") (collectively, the
26 "HERO Patents"), and alleges as follows
27
28

I.

PARTIES

1. Plaintiff Debasish Mukhopadhyay (hereinafter “Deb”) is an individual and citizen of the State of California residing in Palo Alto, California.

2. Upon information and belief, Defendant Lundin Mining Corporation is a Canadian corporation having its principal place of business at 150 King Street West, Suite 1500, Toronto Ontario M5H 1J9, Canada.

II.

JURISDICTION AND VENUE

3. This action arises under the patent laws of the United States, 35 U.S.C. §§ 101 *et seq.*

4. This Court has subject matter jurisdiction over the patent infringement claims under 28 U.S.C. § 1338(a).

5. Venue is proper in this Judicial District pursuant to 28 U.S.C. §§ 1391(d), and 1400(b) because Defendant Lundin is a foreign corporation and subject to personal jurisdiction in this judicial district.

III.

PATENT INFRINGEMENT UNDER 35 U.S.C. § 271

6. Plaintiff Deb is the owner of all right, title and interest in U.S. Patent No. 8,617,398 B2 (“the ’398 patent”) which was duly and legally issued by the United States Patent Office on December 31, 2013, and U.S. Patent No. 8,641,905 B2 (“the ’905 patent”) which was duly and legally issued by the United States Patent Office on February 4, 2014 (collectively, the “HERO patents”). The ’398 patent and ’905 patent are appended hereto as Exhibits “1” and “2” respectively.

IV.

PLAINTIFF’S HERO PROCESS

7. Plaintiff is a well recognized inventor of unique industrial water purification technologies for the electricity generation, chemical, petrochemical, pharmaceutical, microelectronics, and other industries. During the past 15 years, Deb, as the owner of the inventive

HERO patents, has licensed his novel HERO water purification technologies to the most preeminent industry leaders such as General Electric, Intel, and Aquatech, among others.

8. Processes using the HERO® patents utilized the patented high efficiency reverse osmosis technologies, are currently being employed globally in a multitude of industries including power generation, petrochemical and microelectronics. Plaintiff's inventive HERO® water treatment processes have proven effective in treating high silica, fouling, and difficult-to-treat industrial waste streams at least the past decade. Applications include zero liquid discharge, cooling tower blow down treatment, recycle/reuse, and treating water supplies with high organic content (including treated effluents). The HERO® processes are robust and forgiving processes which utilize industry standard and proven components. Water recoveries in excess of 90% result in economical water reuse and environmental benefits. Advantages, beyond the simplicity of design and operation, include lower total installed cost, lower operating costs, and lower life cycle costs when compared to prior art reverse osmosis (RO) processes.

V.

THE ACCUSED OPUS PROCESS USED BY DEFENDANT LUNDIN

9. OPUS Process is alleged by Veolia Water Solutions and Technologies North America, Inc. (hereinafter "Veolia") to be a "proprietary Optimized Pretreatment and Unique Separation Process" for desalination of feedwater with high concentrations of silica, organics, hardness, boron and particulates.

10. Veolia's accused OPUS™ technology consists of multiple processes, including, in various configuration degasification, chemical softening, media filtration, ion exchange softening, cartridge filtration and reverse osmosis (RO). The processes upstream of the RO are designed to reduce the hardness, metals, and suspended solids in the feed water. The RO process operates at an elevated pH, which effectively controls biological, organic and particulate fouling, eliminating scaling due to silica, and increases the rejection of silica and boron. (See Exhibit "3" attached hereto)

11. In feed water applications with high dissolved gases and excess alkalinity, the feed water is subjected to degasification with the addition of an acid, to reduce the quantity of solids

1 generated in the downstream chemical softening process, and to reduce the alkali demand associated
2 with raising the pH.

3 **VI.**

4 **DEFENDANT'S OPERATION OF THE INFRINGING WTF EAGLE MINE**

5 12. In October 2011, Kennecott Eagle Minerals, a wholly owned unit of Rio Tinto, awarded
6 Veolia a contract for an OPUS wastewater treatment plant at its Eagle Mine located in Michigan's
7 upper Peninsula (hereinafter the "Eagle Mine".) The Eagle Mine is the only primary nickel mine
8 operating in the United States and is expected to produce approximately 300 million pounds of
9 nickel and 250 million pounds of copper over the life of the mine.

10 13. On July 17, 2013, Defendant Lundin Mining completed the acquisition of Eagle Mine
11 from Rio Tinto Nickel Company, a subsidiary of Rio Tinto ("Rio Tinto"). The total consideration
12 paid was \$315.3 million, consisting of a \$250 million purchase amount plus project expenditures
13 from January 1, 2013, until transaction closing of \$65.3 million, subject to customary adjustments.
14 Defendant Lundin drew down \$200 million on its revolving credit facility and utilized cash on hand
15 to fund this acquisition. Defendant's acquisition included the water treatment equipment especially
16 designed and built for performance of the accused OPUS process.

17 14. On information and belief, Defendant Lundin is the current owner of the Eagle Mine
18 and operates the accused OPUS Water Treatment Facility ("accused WTF").

19 15. Defendant Lundin's accused WTF uses Veolia's OPUS wastewater treatment process
20 which includes precipitation softening and clarification, filtration, ion exchange softening an a final
21 two pass reverse osmosis (RO) polishing system. The discharge streams from this wastewater
22 treatment process include treatment effluent water, metals precipitation sludge, ion exchange
23 regenerate and RO concentrate. The treated effluent water will be suitable for reuse in the mining
24 process or to reverse back into the groundwater by a treated water infiltration system. The ion
25 exchange regenerate and RO concentrate liquid waste will then be sent to the evaporator and
26 crystallizer system and converted to solids which will be disposed of off-site as a non-hazardous
27 solid waste. (See Exhibit "4" attached hereto.)
28

1 16. On information and belief, Defendant Lundin has, and will continue to operate and
2 maintain the accused WTF to ensure design performance and high-quality recycled water designed
3 and built by Veolia..

4 **VII.**

5 **CLAIM FOR RELIEF**

6 **PATENT INFRINGEMENT OF U.S. PATENT NO. 8,617,398 B2 (“the ’398 patent”)**

7 17. Plaintiff incorporates by reference and re-alleges paragraphs 1 through 16 above as
8 though fully restated herein..

9 18. On December 31, 2013, U.S. Patent No. 8,617,398 B2 (“the ’398 patent”) was duly
10 and legally issued to Debasish Mukhopadhyay for an invention entitled “Method for High
11 Efficiency Reverse Osmosis Operation”.

12 19. Debasish Mukhopadhyay is the owner and inventor and has the right to bring suit
13 under the ‘398 patent.

14 20. Defendant has infringed and continues to infringe the ‘398 patent.

15 21. Defendant has been, and is still infringing, actively inducing others to infringe,
16 and contributorily infringing the ‘398 patent.

17 22. On information and belief, Defendant’s infringement has been willful. Defendant was
18 advised of the existence of Deb’s patent rights at least by the filing of this complaint and continues
19 using the accused OPUS process and related equipment specially designed for performing the
20 accused OPUS process.

21 23. Plaintiff has been, and will continue to be, irreparably harmed by Defendant’s infringing
22 conduct unless Defendant is enjoined by this Court.

23 **VIII.**

24 **CLAIM FOR RELIEF**

25 **PATENT INFRINGEMENT OF U.S. PATENT NO. 8,641,905 B2 (“the ’905 Patent”)**

26 24. Plaintiff incorporates by reference and re-alleges paragraphs 1 through 16 as though
27 fully stated herein.

28 25. On February 4, 2014, U.S. Patent No. 8,641,905 B2 (“the ’905 patent”) was duly

1 and legally issued to Debasish Mukhopadhyay for an invention entitled "Method for High
2 Efficiency Reverse Osmosis Operation".

3 26. Debasish Mukhopadhyay is the owner and inventor and has the right to bring suit
4 under the '905 patent.

5 27. Defendant has infringed and continues to infringe the '905 patent.

6 28. Defendant has been, and is still infringing, actively inducing others to infringe, and
7 contributorily infringing the '905 patent.

8 29. On information and belief, Defendant's infringement has been willful. Defendant was
9 advised of the existence of Deb's patent rights at least by the filing of this complaint and continues
10 using the accused OPUS process and related equipment specially designed for performing the
11 accused OPUS process.

12 30. Plaintiff has been, and will continue to be, irreparably harmed by Defendant's infringing
13 conduct unless Defendant is enjoined by this Court.

14 **PRAYER FOR RELIEF**

15 Wherefore, Plaintiff respectfully prays that the Court enter judgment in its favor against
16 Defendant Lundin and grant the following relief:

- 17 1) Adjudge that Defendant has infringed U.S. Patent No. 8,617,398 B2 ("the '398
18 patent");
- 19 2) Adjudge that Defendant has infringed U.S. Patent No. 8,641,905 B2 ("the '905
20 patent");
- 21 3) Enter a permanent injunction restraining and enjoining Defendant and its respective
22 officers, agents, servants, employees, attorneys, and consigns and other persons in
23 active concert or participation with them from contributing to or inducing the
24 infringement of the '398 patent;
- 25 4) Enter a permanent injunction restraining and enjoining Defendant and its respective
26 officers, agents, servants, employees, attorneys, and consigns and other persons in
27 active concert or participation with them from contributing to or inducing the
28 infringement of the '905 patent;

- 5) Award damages to compensate Plaintiff for Defendant's infringement of the '398 patent pursuant to 35 U.S.C. § 284;
- 6) Award damages to compensate Plaintiff for Defendant's infringement of the '905 patent pursuant to 35 U.S.C. § 284;
- 7) Enter a declaration that Defendant's use of the accused OPUS process, and the specially designed related equipment, infringes the '398 patent;
- 8) Enter declaration that Defendant's use of the accused OPUS process, and the specially designed related equipment, infringes the '905 patent;
- 9) Find that Defendant's infringement is deliberate and willful, and that the damages awarded be trebled and prejudgment interest be awarded to Plaintiff pursuant to 35 U.S.C. § 284;
- 10) Award Plaintiff reasonable attorneys' fees pursuant to 35 U.S.C. § 285;
- 11) Award Plaintiff interest and costs pursuant to 35 U.S.C. § 284 and Rule 54(d) of the Federal Rules of Civil Procedure; and
- 12) Award Plaintiff any such other relief as the Court may deem just and appropriate.

JURY DEMAND

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiff Debasish Mukhopadhyay requests a jury trial on all issues so triable to a jury in this matter.

DATE: February 28, 2014

Respectfully submitted,

FRISENDA, QUINTON & NICHOLSON

By: _____

FRANK FRISENDA, JR.
Attorneys for Plaintiff
Debasish Mukhopadhyay